Endoscopic Endonasal Transsphenoidal Surgery ofParasellar Rathke's Cleft Cyst

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Introduction

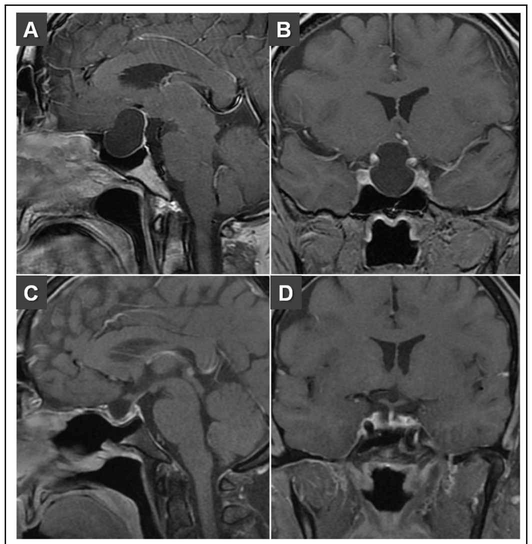
Rathke's cleft cysts (RCC) are benign lesions that originate from remnants of Rathke's pouch. They can compress adjacent structures causing visual loss and endocrine dysfunction, and may require surgical treatment. In the last decade, endoscopic endonasal transsphenoidal surgery has gained popularity in the surgical management of pituitary and parasellar tumors. Nevertheless, postoperative cyst recurrence and endocrine dysfunction remain major concerns despite transsphenoidal surgery. The purpose of this study was to review the rate of endocrine dysfunction and recurrences in patients who underwent endoscopic transsphenoidal surgery for RCC.

Methods

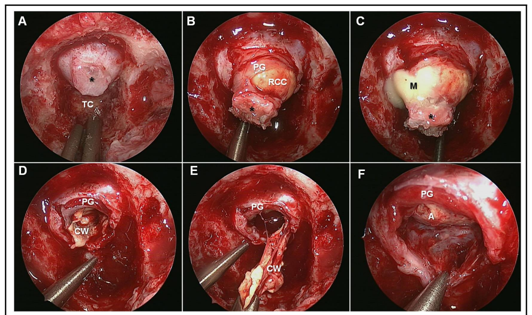
A retrospective chart review was performed to evaluate 11 patients with RCC who were treated using an endoscopic endonasal approach. Data were extracted regarding patient demographics, presenting symptoms, cyst characteristics, surgical treatment, and postoperative endocrine and visual outcomes.

Results

Eleven patients (6 males, 5 females) underwent a purely endoscopic endonasal transsphenoidal approach (EETA). Subtotal resection of the cyst wall with drainage of the intracystic contents followed by obliteration of the cyst with a fat graft was performed in all patients. Two patients underwent repeated surgeries for symptomatic cyst recurrence. One patient ultimately underwent extracapsular removal of entire cyst wall because of multiple recurrences after simple drainage. One patient developed transient diabetes insipidus. There were no incidences of new permanent hypopituitarism, visual deficits, or postoperative cerebrospinal fluid leaks. All patients reported an improvement of initial preoperative symptoms.



T1-weighted post-gadolinium MRI A and B: Preoperative MRI. C and D: 14-months follow-up



Intraoperative endoscopic photographs of Patient 2 demonstrating aggressive extracapsular removal of a recurrent RCC. A: An endoscopic endonasal transclival (TC) approach is performed to obtain better access to the infrasellar portion of the cyst. An area of thickened scar tissue from prior surgeries is adherent to the sellar dura (asterisk). B: The sellar dura is opened sharply and the RCC is separated from the normal pituitary gland (PG). C: The cyst is decompressed and the intracystic mucoid (M) material is removed. D and E: The remaining cyst wall (CW) is carefully dissected in an extracapsular fashion from the normal PG, suprasellar arachnoid, and medial walls of the cavernous sinus. F: Final view of the resection cavity showing the suprasellar arachnoid (A) and PG.

Conclusions

A non-aggressive strategy of partial cyst wall removal and simple drainage of cyst contents via EETA is a safe and effective approach for surgical treatment of RCC with a low rate of postoperative endocrine and visual complications. However, a more aggressive strategy of extracapsular removal of the cyst wall may be indicated in cases of repeated recurrences. The endoscopic approach provides wide panoramic visualization to facilitate extracapsular resection with preservation of the pituitary gland and stalk.

Learning Objectives

By the conclusion of this session, participants should be able to:

1) Describe the endoscopic endonasal technique for resection of rathke cleft cysts

2) Understand the relation between extent of resection with postoperative complications.

3) Discuss the rate of recurrence after surgical intervention of rathke cleft cysts.

References

1.Iannelli A, Martini C, Cosottini M, Castagna M, Bogazzi F, Muscatello L. Rathke's cleft cysts in children: clinical, diagnostic, and surgical features. Childs Nerv Syst 2012; 28:297-303.